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SS. Antonio e Biagio e Cesare Arrigo
Alessandria



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Azienda Ospedaliera di Alessandria



Protocollo di impianto dei Port in età Pediatrica



GAVePed 2023 RIMINI



GAVePed
Gruppo Accessi Venosi Pediatrici

Alessio Pini Prato
Ospedale Infantile, Alessandria



Rimini, 15-16/05/2023



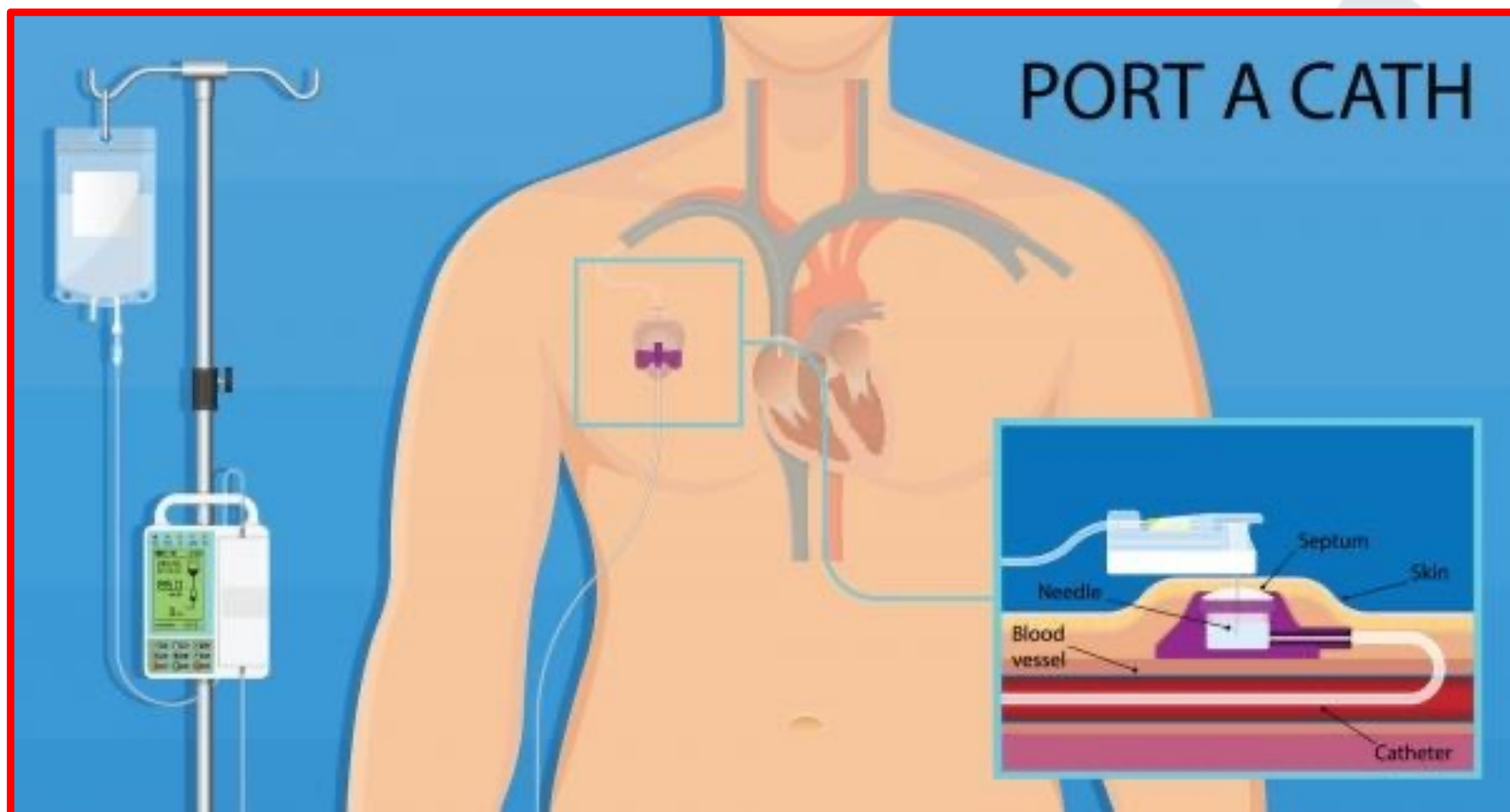
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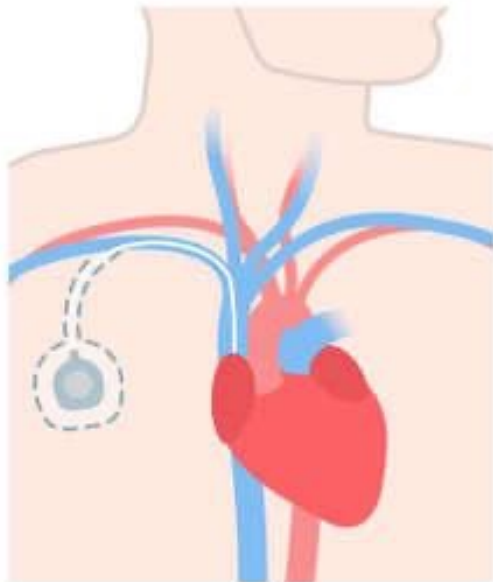
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Indications to Port in children



- Long term intermittent use
- Previous multiple removal of external VADs
- Poor venous patrimony and frequent draws
- Strong preference of the patient
- Poor compliance to external VADs
- Skin abnormalities

IMPLANTABLE VENOUS ACCESS PORT



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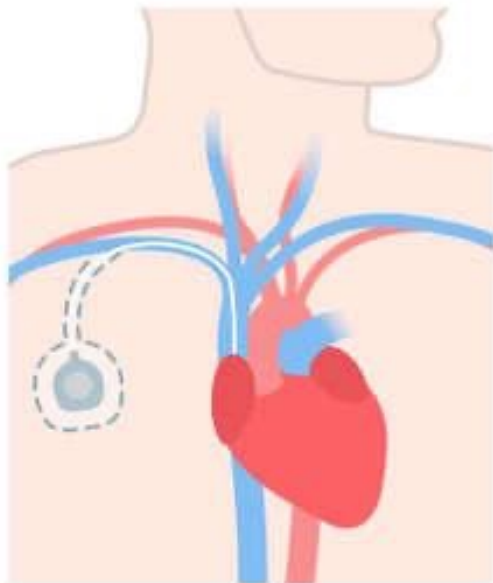
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Contraindications to Port in children



Severe uncontrolled coagulopathy

Platelets count lower than 50-70.000/mm³

Fungal bloodstream infection

Malnutrition (high risk of reservoir issues)

IMPLANTABLE VENOUS ACCESS PORT



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Materials



Plastic

Titanium

Both



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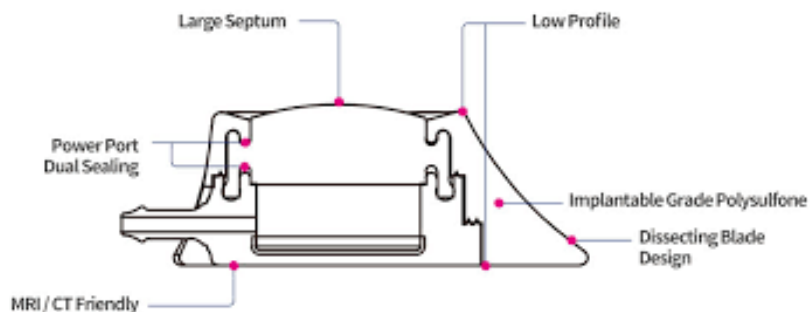


Materials



Low Profile

Very Low Profile



10 mm



8 mm



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Other aspects

Tip – no distal valve

Catheter material – either silicone or polyurethane (better for PICC-Port)

Number of lumen – single or double based on indication

Power injectable – most but viscosity of medium remains an issue

Introduction kit – same as for other catheters



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Insertion sites

- Il protocollo ISAC-Ped per PICC, CICC e FICC (15")
- **Maria Giuseppina Annetta**

Chest-Port – reservoir over pectoralis major muscle

PICC-Port – reservoir over the biceps muscle

FICC-Port – reservoir over the quadriceps muscle



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Insertion Bundles for Chest-Ports

1. Preprocedural ultrasound evaluation of the veins of the supra/infra-clavicular area according to the RaCeVA protocol.
2. Appropriate aseptic technique: hand hygiene, skin antisepsis with 2% chlorhexidine, maximal barrier precautions.
3. Ultrasound guided puncture and cannulation of the most appropriate vein.
4. Ultrasound scan of the pleura, for ruling out pneumothorax.
5. Ultrasound scan of the vasculature, for assessing the correct direction of the guidewire and of the catheter (tip navigation).
6. Intraprocedural assessment of tip location using intracavitary ECG and/or ultrasound-based tip location according to the ECHOTIP-Ped protocol
7. Placement of the reservoir over the pectoralis major muscle, at proper distance from the clavicle and from the humerus head.
8. Closure of the pocket with resorbable intradermic suture and cyanoacrylate glue





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Insertion Bundles for PICC-Ports

1. Preprocedural ultrasound evaluation of the veins of the upper arm and of the supra/infra-clavicular area according to the RaPeVA and RaCeVA protocols.
2. Appropriate aseptic technique: hand hygiene, skin antisepsis with 2% chlorhexidine, maximal barrier precautions.
3. Careful identification of the brachial artery and of the median nerve before the venipuncture.
4. Ultrasound guided puncture and cannulation of the most appropriate vein in terms of diameter, either in Dawson's green zone or yellow zone; if the vein is in the yellow zone and very close to the axilla, consider tunneling, so to place the reservoir in the green zone.
5. Ultrasound scan of the supraclavicular area, for assessing the correct direction of the catheter (tip navigation).
6. Intraprocedural assessment of tip location using intracavitary ECG and/or ultrasound-based tip location according to the ECHOTIP-Ped protocol.
7. Placement of the reservoir over the biceps muscle, preferably in Dawson's green zone.
8. Closure of the pocket with resorbable intradermic suture and cyanoacrylate glue.





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Tips and tricks during insertion

Tip location first (IC-ECG)

Pocket with hydro-dissection

Wide and deep pocket

No need for suturing the reservoir to the fascia

Either forward or backwards pockets work

Reservoir connection outside the pocket

Subcuticular closer with covering cyanoacrilate glue





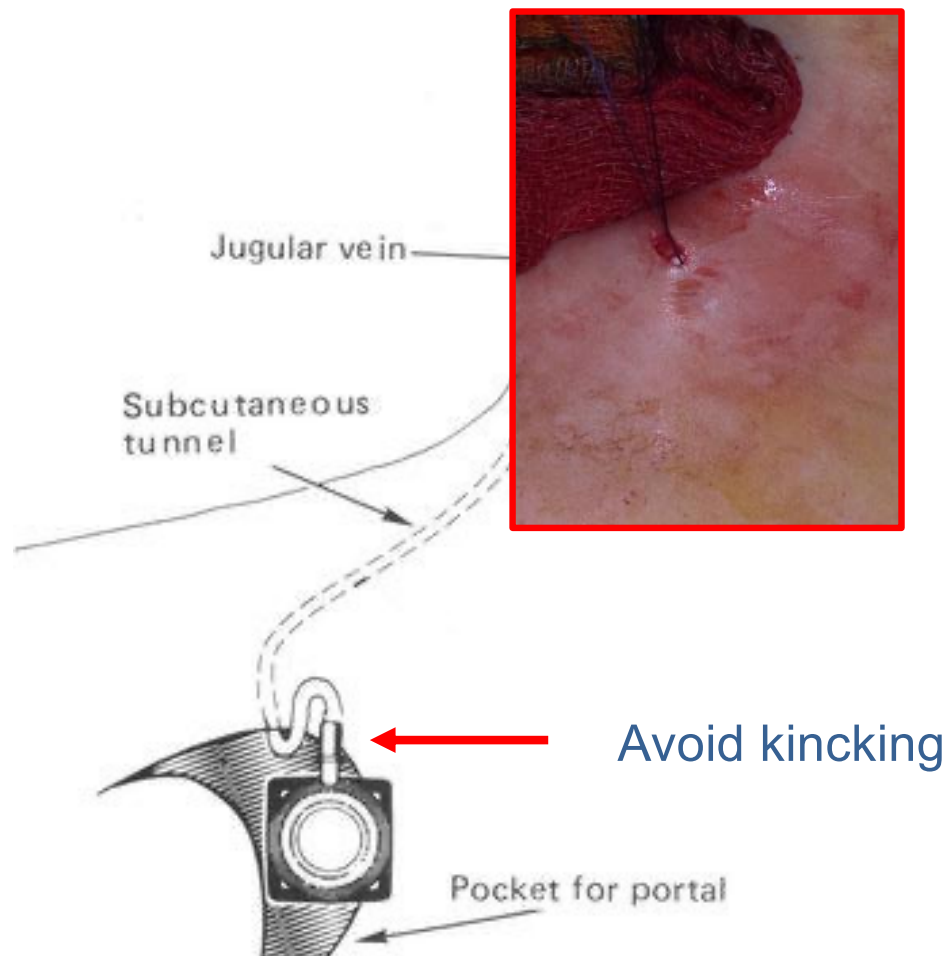
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The catheter is **suspended** at the venipuncture site to allow correct straightening after reservoir is placed in the pocket



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Huber (non-coring) needle



Leave in place after implant

No more than 1 week in place

Flush and lock with saline (push-pause)

Use turbulent flush

Monthly flushing is recommended

Up to two months without flushing



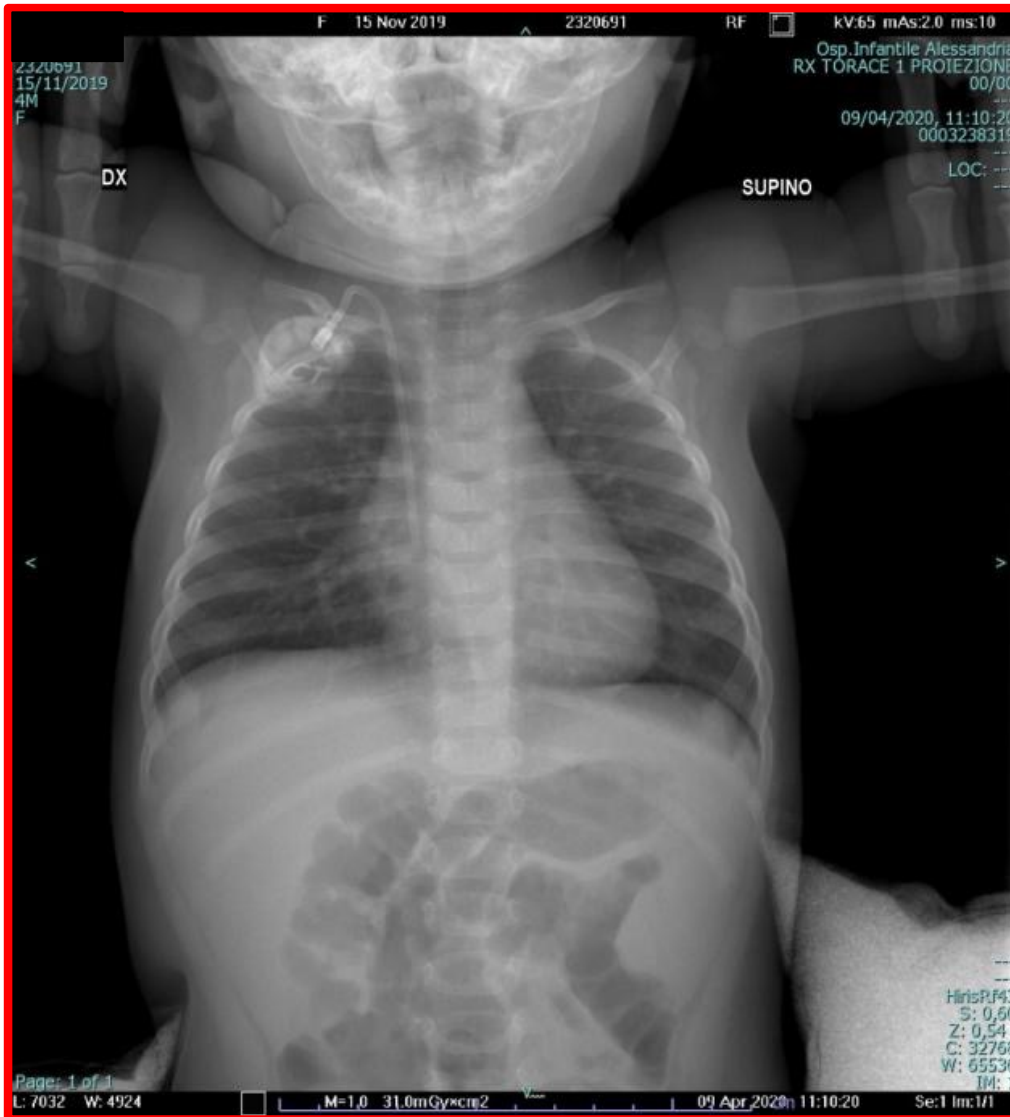
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Even in small infants Ports are
feasible and effective!

Smallest in a 5 kg and 5/12 infant

Size discrepancy not an issue





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Specific complications

Deconnection and or rupture

Malposition or the reservoir

Other reservoir issues

Extravasation

Infections



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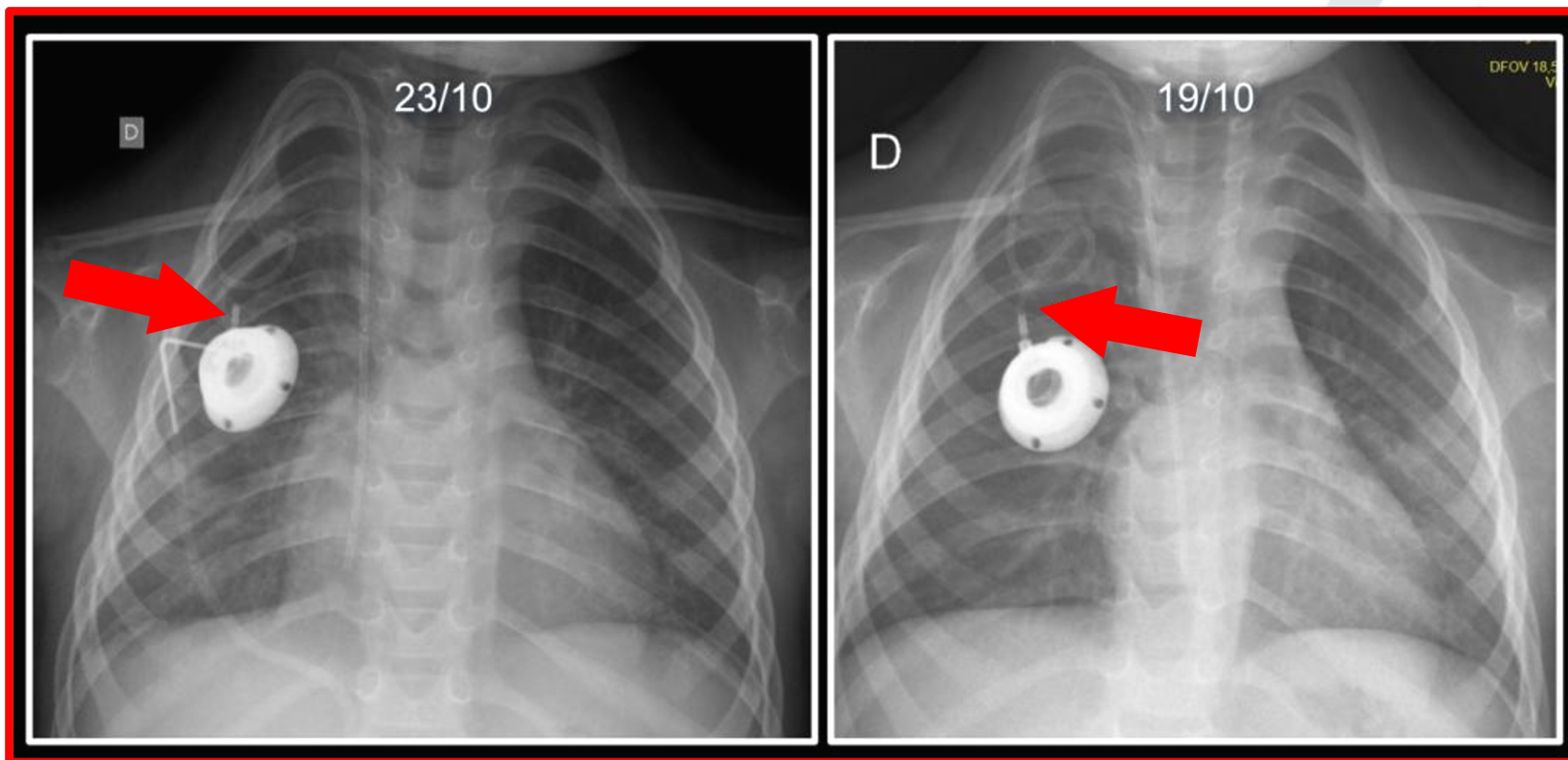


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Specific Port complications

Reservoir disconnection





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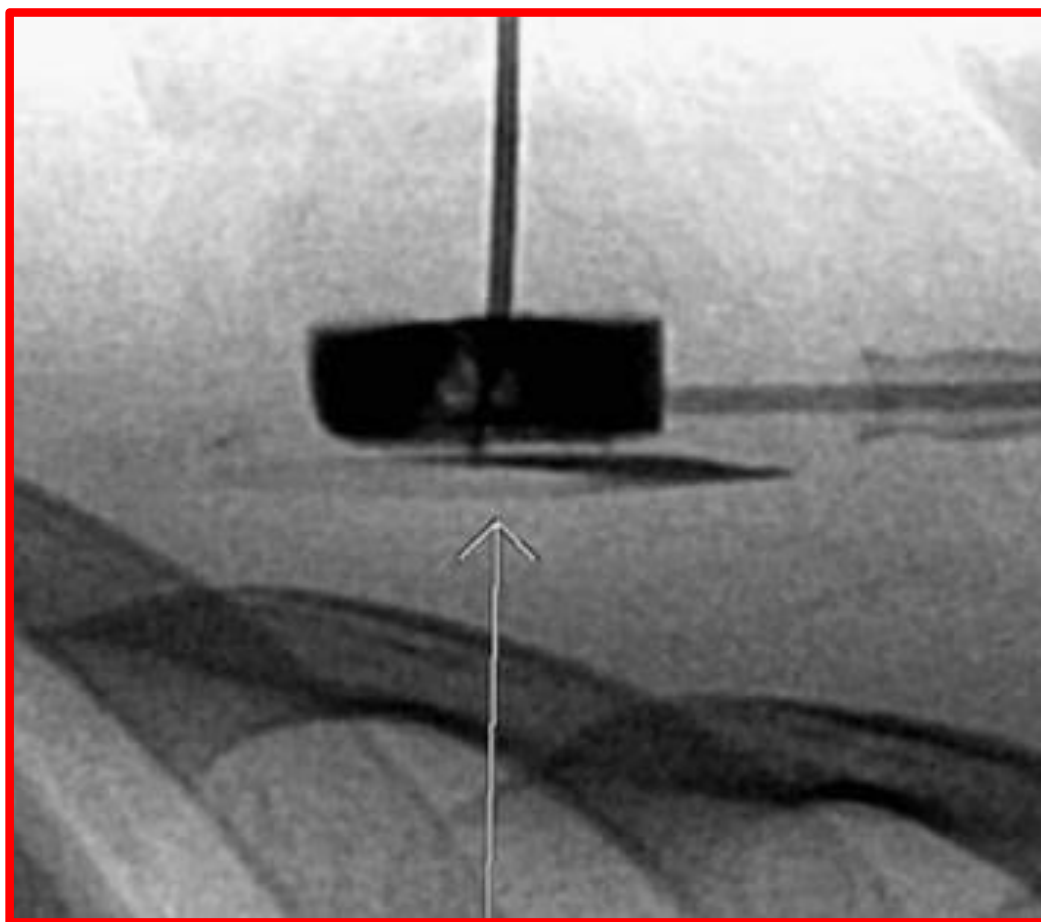
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Plastic reservoir perforation





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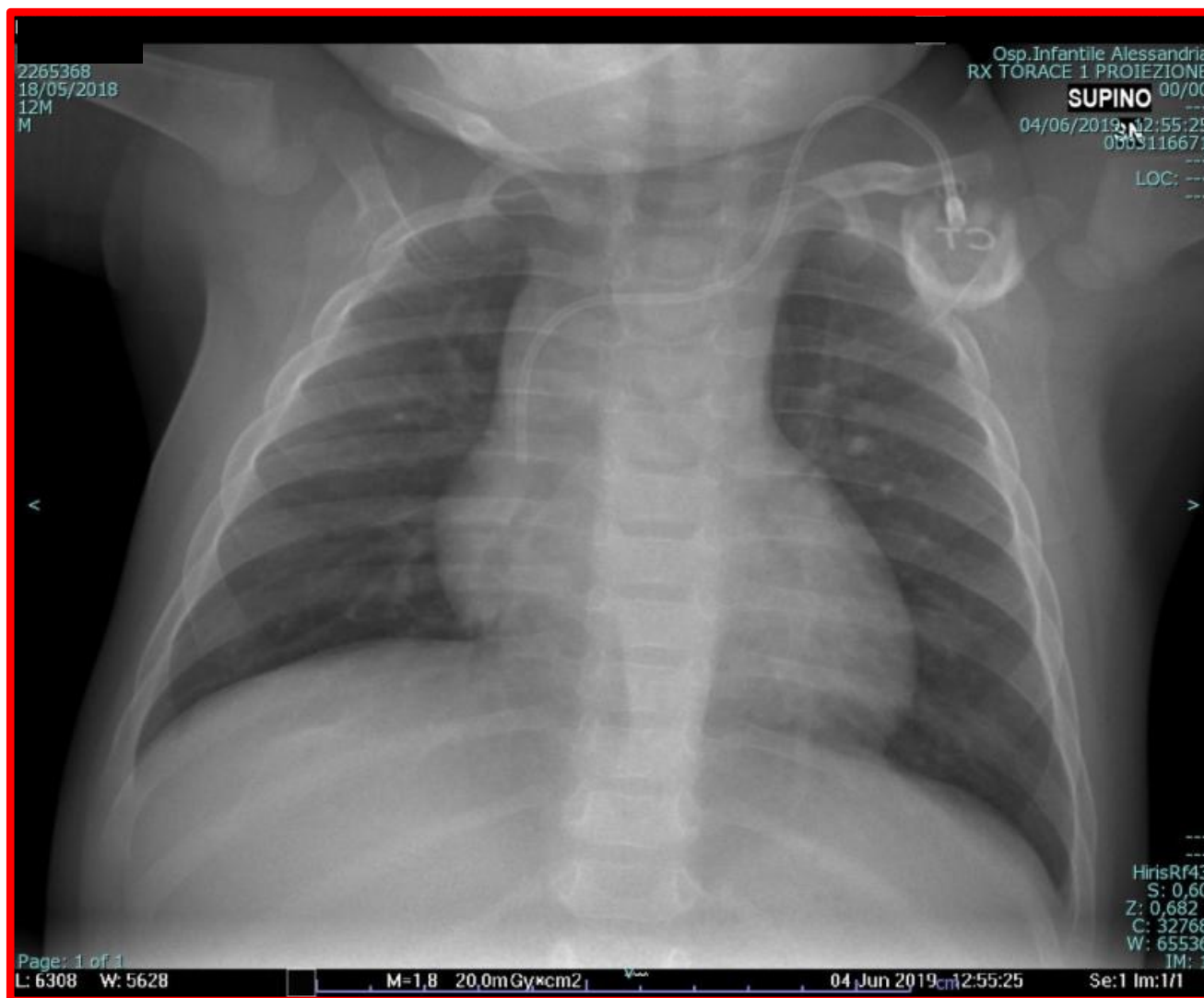
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Reservoir rotation within the pocket





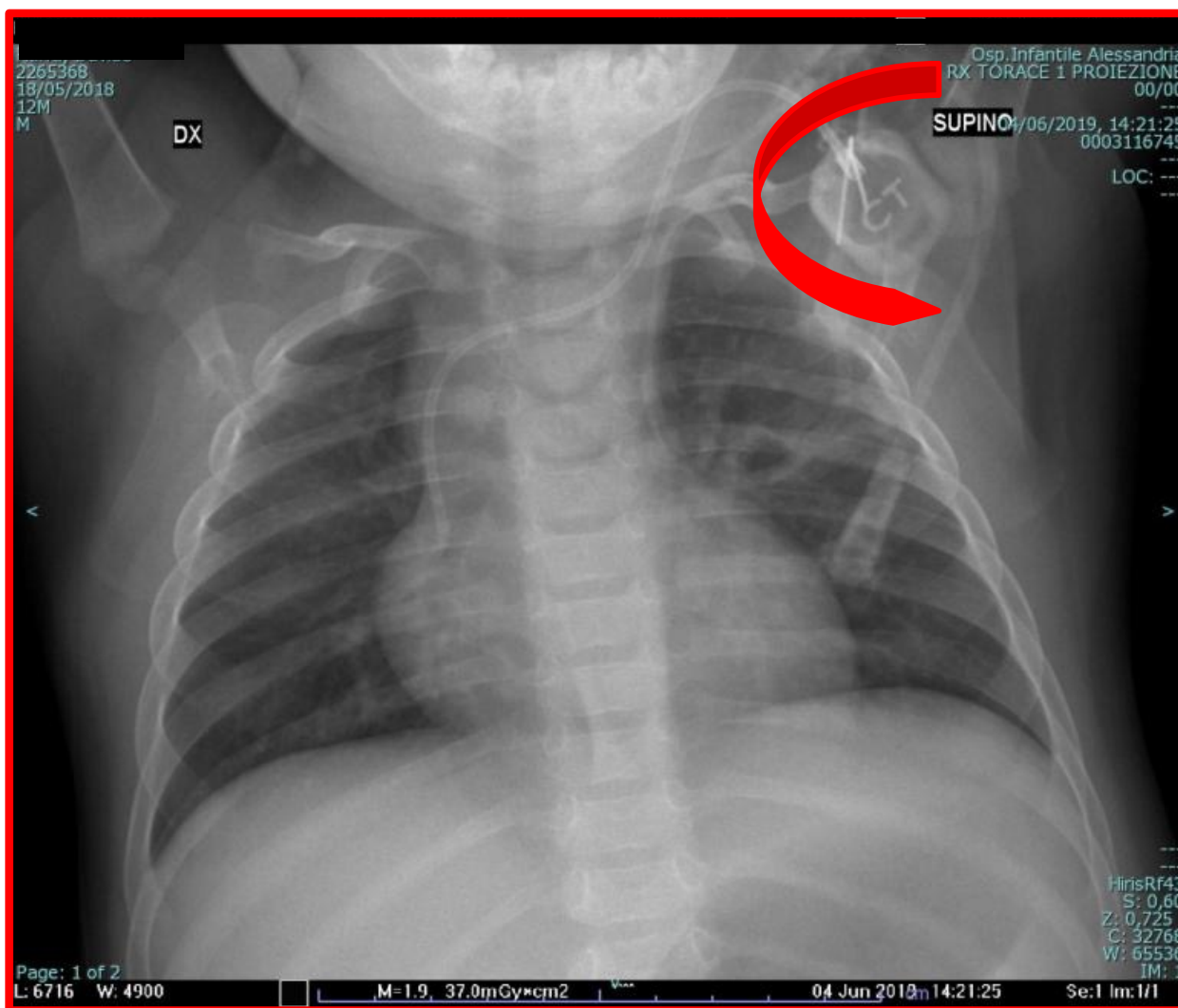
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Decubitus of the reservoir





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Experience and
bundles

Duration of procedure

Site of venipuncture

Number of attempts



**Targeting
Zero Complications**



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Dott.ssa Giulia Mottadelli
Dott.ssa Germana Casaccia

Dietitians

Marilisa Caraccia
Alice Grandi

Pediatric Stoma Nurses

Catia Perretti, Laura Pombia

Pediatric Radiologist

Dott. James Bakeine

Pediatric Gastroenterologists

Dott. Enrico Felici
Dott.ssa Elena Borali



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Reference
Network**

for rare or low prevalence
complex diseases

 **Network**
Inherited and Congenital
Anomalies (ERNICA)

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Dott.ssa Fabiana Vercellino

Pediatric Psychologist

Dott.ssa Rossella Sterpone

ICU and NICU

Dott. Giovanni Montobbio
Dott.ssa Maria Pia Dusio
Dott. Federico Schena

Dedicated Pathologist

Dott.ssa Sara Casella
Dott. Lorenzo Giacometti

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Dott.ssa Carlotta Dagna
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